

SEQUENCE LISTING

<110> Monsanto Company

<120> TRANSGENIC PLANTS CONTAINING ALTERED LEVELS OF STEROID COMPOUNDS

<130> MTC6783.1

<160> 33

<170> PatentIn version 3.0

<210> 1

<211> 585

<212> PRT

<213> *Arabidopsis thaliana*

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35 40 45

Lys Ala Thr Ala Ala Gln Thr Leu Lys Leu Ser Ala Val Asn Ser Thr
50 55 60

Val Met Met Lys Pro Ala Lys Ile Ala Leu Asp Gln Phe Ile Ala Ser
65 70 75 80

Leu Phe Thr Phe Leu Leu Leu Tyr Ile Leu Arg Arg Ser Ser Asn Lys
85 90 95

Asn Lys Lys Asn Arg Gly Leu Val Val Ser Gln Asn Asp Thr Val Ser
100 105 110

Lys Asn Leu Glu Thr Glu Val Asp Ser Gly Thr Asp Val Ile Ile Val
115 120 125

Gly Ala Gly Val Ala Gly Ser Ala Leu Ala His Thr Leu Gly Lys Glu
130 135 140

Gly Arg Arg Val His Val Ile Glu Arg Asp Phe Ser Glu Gln Asp Arg
145 150 155 160

Ile Val Gly Glu Leu Leu Gln Pro Gly Gly Tyr Leu Lys Leu Ile Glu
165 170 175

Leu Gly Leu Glu Asp Cys Val Lys Lys Ile Asp Ala Gln Arg Val Leu
180 185 190

Gly Tyr Val Leu Phe Lys Asp Gly Lys His Thr Lys Leu Ala Tyr Pro
195 200 205

Leu Glu Thr Phe Asp Ser Asp Val Ala Gly Arg Ser Phe His Asn Gly
210 215 220

Arg Phe Val Gln Arg Met Arg Glu Lys Ala Leu Thr Leu Ser Asn Val
225 230 235 240

Arg Leu Glu Gln Gly Thr Val Thr Ser Leu Leu Glu Glu His Gly Thr
245 250 255

Ile Lys Gly Val Arg Tyr Arg Thr Lys Glu Gly Asn Glu Phe Arg Ser
260 265 270

Phe Ala Pro Leu Thr Ile Val Cys Asp Gly Cys Phe Ser Asn Leu Arg
275 280 285

Arg Ser Leu Cys Lys Pro Lys Val Asp Val Pro Ser Thr Phe Val Gly
290 295 300

Leu Val Leu Glu Asn Cys Glu Leu Pro Phe Ala Asn His Gly His Val
305 310 315 320

Val Leu Gly Asp Pro Ser Pro Ile Leu Met Tyr Pro Ile Ser Ser Ser
325 330 335

Glu Val Arg Cys Leu Val Asp Val Pro Gly Gln Lys Leu Pro Pro Ile
340 345 350

Ala Asn Gly Glu Met Ala Lys Tyr Leu Lys Thr Arg Val Ala Pro Gln
355 360 365

Val Pro Thr Lys Val Arg Glu Ala Phe Ile Thr Ala Val Glu Lys Gly
370 375 380

Asn Ile Arg Thr Met Pro Asn Arg Ser Met Pro Ala Asp Pro Ile Pro
385 390 395 400

Thr Pro Gly Ala Leu Leu Leu Gly Asp Ala Phe Asn Met Arg His Pro
405 410 415

Leu Thr Gly Gly Met Thr Val Ala Leu Ala Asp Ile Val Val Leu
420 425 430

Arg Asp Leu Leu Arg Pro Ile Arg Asn Leu Asn Asp Lys Glu Ala Leu
435 440 445

Ser Lys Tyr Ile Glu Ser Phe Tyr Thr Leu Arg Lys Pro Val Ala Ser
450 455 460

Thr Ile Asn Thr Leu Ala Asp Ala Leu Tyr Lys Val Phe Leu Ala Ser
465 470 475 480

Ser Asp Glu Ala Arg Thr Glu Met Arg Glu Ala Cys Phe Asp Tyr Leu
485 490 495

Ser Leu Gly Gly Val Phe Ser Ser Gly Pro Val Ala Leu Leu Ser Gly
500 505 510

Leu Asn Pro Arg Pro Leu Ser Leu Val Leu His Phe Phe Ala Val Ala
515 520 525

Ile Tyr Ala Val Cys Arg Leu Met Leu Pro Phe Pro Ser Ile Glu Ser
530 535 540

Phe Trp Leu Gly Ala Arg Ile Ile Ser Ser Ala Ser Ser Ile Ile Phe
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<213> *Arabidopsis thaliana*

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<213> *Arabidopsis thaliana*

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30 25 30

Thr Val Phe Tyr Val Thr Asn Arg Gly Lys Lys Ala Thr Gln Leu Ala
35 40 45

Asp Ala Val Val Glu Glu Arg Glu Asp Gly Ala Thr Asp Val Ile Ile
50 55 60

Val Gly Ala Gly Val Gly Gly Ser Ala Leu Ala Tyr Ala Leu Ala Lys
65 70 75 80

Asp Gly Arg Arg Val His Val Ile Glu Arg Asp Leu Arg Glu Pro Glu
85 90 95

Arg Ile Met Gly Glu Phe Met Gln Pro Gly Gly Arg Leu Met Leu Ser
100 105 110

Lys Leu Gly Leu Glu Asp Cys Leu Glu Gly Ile Asp Ala Gln Lys Ala
115 120 125

Thr Gly Met Thr Val Tyr Lys Asp Gly Lys Glu Ala Val Ala Ser Phe
130 135 140

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				180					185						190
Lys	Gly	Val	Ile	Lys	Gly	Val	Thr	Tyr	Lys	Asn	Ser	Ala	Gly	Glu	Glu
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Gln	Val	Gly	Phe	Ile	Ser	Lys	Asn	Cys	Gln	Leu	Glu	Glu	Pro	Glu	Lys
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Leu	Val	Ala	Ser	Thr	Asp	Glu	Ala	Lys	Glu	Ala	Met	Arg	Gln	Gly	Cys
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Tyr	Asp	Tyr	Leu	Ser	Ser	Gly	Gly	Phe	Arg	Thr	Ser	Gly	Met	Met	Ala
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Leu Leu Gly Gly Met Asn Pro Arg Pro Ile Ser Leu Ile Tyr His Leu
450 455 460

Cys Ala Ile Thr Leu Ser Ser Ile Gly His Leu Leu Ser Pro Phe Pro
465 470 475 480

Ser Pro Leu Gly Ile Trp His Ser Leu Arg Leu Phe Gly Leu Ala Met
485 490 495

Lys Met Leu Val Pro His Leu Lys Ala Glu Gly Val Ser Gln Met Leu
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Phe Pro Val Asn Ala Ala Tyr Ser Lys Ser Tyr Met Ala Ala Thr
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Ala Leu
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<212> DNA
<213> *Arabidopsis thaliana*

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<212> PRT
<213> *Arabidopsis thaliana*

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Leu Ala Asp Thr Val Ala Glu Asp Gln Lys Asp Gly Ala Ala Asp Val
35 40 45

Ile Ile Val Gly Ala Gly Val Gly Gly Ser Ala Leu Ala Tyr Ala Leu
50 55 60

Ala Lys Asp Gly Arg Arg Val His Val Ile Glu Arg Asp Met Arg Glu
65 70 75 80

0
1
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3
4
5
6
7
8
9

Pro Glu Arg Met Met Gly Glu Phe Met Gln Pro Gly Gly Arg Leu Met
85 90 95
Leu Ser Lys Leu Gly Leu Gln Asp Cys Leu Glu Asp Ile Asp Ala Gln
100 105 110
Lys Ala Thr Gly Leu Ala Val Tyr Lys Asp Gly Lys Glu Ala Asp Ala
115 120 125
Pro Phe Pro Val Asp Asn Asn Asn Phe Ser Tyr Glu Pro Ser Ala Arg
130 135 140
Ser Phe His Asn Gly Arg Phe Val Gln Gln Leu Arg Arg Lys Ala Phe
145 150 155 160
Ser Leu Ser Asn Val Arg Leu Glu Glu Gly Thr Val Lys Ser Leu Leu
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Glu Glu Lys Gly Val Val Lys Gly Val Thr Tyr Lys Asn Lys Glu Gly
180 185 190
Glu Glu Thr Thr Ala Leu Ala Pro Leu Thr Val Val Cys Asp Gly Cys
195 200 205
Tyr Ser Asn Leu Arg Arg Ser Leu Asn Asp Asp Asn Asn Ala Glu Ile
210 215 220
Met Ser Tyr Ile Val Gly Tyr Ile Ser Lys Asn Cys Arg Leu Glu Glu
225 230 235 240
Pro Glu Lys Leu His Leu Ile Leu Ser Lys Pro Ser Phe Thr Met Val
245 250 255
Tyr Gln Ile Ser Ser Thr Asp Val Arg Cys Gly Phe Glu Val Leu Pro
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275 280 285
Asn Thr Ile Val Pro Gln Val Pro Pro Lys Leu Arg Lys Ile Phe Leu
290 295 300
Lys Gly Ile Asp Glu Gly Ala His Ile Lys Val Val Pro Ala Lys Arg
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Met Thr Ser Thr Leu Ser Lys Lys Gly Val Ile Val Leu Gly Asp
325 330 335
Ala Phe Asn Met Arg His Pro Val Val Ala Ser Gly Met Met Val Leu
340 345 350
Leu Ser Asp Ile Leu Ile Leu Arg Arg Leu Leu Gln Pro Leu Ser Asn
355 360 365
Leu Gly Asp Ala Asn Lys Val Ser Glu Val Ile Asn Ser Phe Tyr Asp
370 375 380

Ile Arg Lys Pro Met Ser Ala Thr Val Asn Thr Leu Gly Asn Ala Phe
385 390 395 400

Ser Gln Val Leu Ile Gly Ser Thr Asp Glu Ala Lys Glu Ala Met Arg
405 410 415

Gln Gly Val Tyr Asp Tyr Leu Cys Ser Gly Gly Phe Arg Thr Ser Gly
420 425 430

Met Met Ala Leu Leu Gly Gly Met Asn Pro Arg Pro Leu Ser Leu Val
435 440 445

Tyr His Leu Cys Ala Ile Thr Leu Ser Ser Ile Gly Gln Leu Leu Ser
450 455 460

Pro Phe Pro Ser Pro Leu Arg Ile Trp His Ser Leu Lys Leu Phe Gly
465 470 475 480

Leu Ala Met Lys Met Leu Val Pro Asn Leu Lys Ala Glu Gly Val Ser
485 490 495

Gln Met Leu Phe Pro Ala Asn Ala Ala Tyr His Lys Ser Tyr Met
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<212> DNA

<213> *Arabidopsis thaliana*

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caagaataaa gaatgcgaac aaacaacagc cttggcacct ctcactgtgg tatgcgacgg 360

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<213> *Arabidopsis thaliana*

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Leu Ala Asp Thr Val Ala Glu Asp Gln Lys Asp Gly Ala Ala Asp Val
35 40 45

Ile Ile Val Gly Ala Gly Val Gly Gly Ser Ala Leu Ala Tyr Ala Leu
50 55 60

Leu Ser Val Arg Leu Glu Glu Gly Thr Val Lys Ser Leu Leu Glu Glu
65 70 75 80

Lys Gly Val Val Lys Gly Val Thr Tyr Lys Asn Lys Glu Cys Glu Gln
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Thr Thr Ala Leu Ala Pro Leu Thr Val Val Cys Asp Gly Cys
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<210> 10
<211> 457
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<213> *Arabidopsis thaliana*

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<223> n=a, c, g or t

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<223> X=any amino acid

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20 25 30

Phe Val Ala Phe Tyr Gly Phe Phe Val Lys Pro Lys Arg Asn Gly Leu
35 40 45

Arg His Asp Arg Lys Thr Val Ser Thr Val Thr Ser Asp Val Gly Ser
50 55 60

Val Asn Ile Thr Gly Asp Thr Val Ala Asp Val Ile Val Val Gly Ala
65 70 75 80

Gly Val Ala Gly Ser Ala Leu Ala Tyr Thr Leu Gly Lys Gly Lys Phe
85 90 95

Lys Arg Arg Val His Val Ile Glu Arg Asp Leu Ser Glu Pro Asp Arg
100 105 110

Ile Val Gly Glu Leu Leu Gln Pro Xaa Gly Tyr Leu Lys Leu Leu Glu
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Cys Gly Ile Gly Asp Cys Val Glu Glu Ile Asp Ala Gln Xaa Val Tyr
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Gly Tyr Ala Leu Phe Lys Asn Gly
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<212> DNA

<213> *Arabidopsis thaliana*

<400> 12

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tgttgtggcc aaactcataa ctcctccaa atccaagaag aaaacaagtg tcgtcccact 180

ccctccagtt cttcaagcgt ggcctccatt tatcgatcc ctaatccgct tcatgaaagg 240

tccaatagtg ctacttagag aggaatatcc taagcttggaa agtgtttca cagtgaagct 300

tcttcacaaa aacatcactt ttctcatcggt tcccgaaagtc tcgtcccact ttttcaacgc 360

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<210> 13
<211> 473
<212> PRT
<213> *Arabidopsis thaliana*

<400> 13

Met Asp Trp Asp Tyr Tyr Thr Leu Leu Lys Thr Ser Val Ala Ile Ile
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Ile Val Phe Val Val Ala Lys Leu Ile Thr Ser Ser Lys Ser Lys Lys
20 25 30

Lys Thr Ser Val Val Pro Leu Pro Pro Val Leu Gln Ala Trp Pro Pro
35 40 45

Phe Ile Gly Ser Leu Ile Arg Phe Met Lys Gly Pro Ile Val Leu Leu
50 55 60

Arg Glu Glu Tyr Pro Lys Leu Gly Ser Val Phe Thr Val Lys Leu Leu
65 70 75 80

Pro Glu Asn Phe Asp Pro Asp Arg Phe Ser Lys Glu Arg Glu Glu Asp
385 390 395 400

Lys Ala Ala Gly Ser Cys Ser Tyr Ile Ser Leu Gly Ala Gly Arg His
405 410 415

Glu Cys Pro Gly Gly Ser Phe Ala Phe Leu Gln Ile Lys Ala Val Trp
420 425 430

Cys His Leu Leu Arg Asn Phe Glu Leu Glu Leu Val Ser Pro Phe Pro
435 440 445

Glu Ile Asn Trp Asn Ala Leu Val Val Gly Ala Lys Gly Asn Val Met
450 455 460

Val Arg Tyr Lys Arg Arg Pro Phe Ser
465 470

<210> 14

<211> 523

<212> DNA

<213> *Arabidopsis thaliana*

<400> 14

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agcttggttca caaaaagatt acttttctta ttgggtcctga agtctctgct cattttttca 120

aagcttctga atctgatctt agtcagcagg aagtgtatca gttcaatgtc cctactttt 180

gtcctggagt tgtttcgat gttgattatt ctgtttcgtc aggagcagtt cggttcttca 240

ctgaggcact tagagttaac aagttgaagg gttatgtgga tatgatggtt actgaagctg 300

aggattactt ctctaaatgg ggagagagtg gtgaagttga tattaagggtt gagctagaga 360

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tgtatgtgtc tctgctttgt tccatgacct tgacaatgga atgcttccca tcagtgcctc 480

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<210> 15

<211> 87

<212> PRT

<213> *Arabidopsis thaliana*

<400> 15

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Ile Arg Leu Glu Leu Val His Lys Lys Ile Thr Phe Leu Ile Gly Pro
20 25 30

Glu Val Ser Ala His Phe Phe Lys Ala Ser Glu Ser Asp Leu Ser Gln

35

40

45

Gln Glu Val Tyr Gln Phe Asn Val Pro Thr Phe Gly Pro Gly Val Val
 50 55 60

Phe Asp Val Asp Tyr Ser Val Arg Gln Glu Gln Phe Gly Ser Ser Leu
 65 70 75 80

Arg His Leu Glu Leu Thr Ser
 85

<210> 16
 <211> 1852
 <212> DNA
 <213> *Arabidopsis thaliana*

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<210> 17
<211> 488
<212> PRT
<213> *Arabidopsis thaliana*

<400> 17

Met Glu Leu Asp Ser Glu Asn Lys Leu Leu Lys Thr Gly Leu Val Ile
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20 25 30

Asp Ser Lys Lys Lys Arg Leu Pro Pro Thr Leu Lys Ala Trp Pro Pro
35 40 45

Leu Val Gly Ser Leu Ile Lys Phe Leu Lys Gly Pro Ile Ile Met Leu
50 55 60

Arg Glu Glu Tyr Pro Lys Leu Gly Ser Val Phe Thr Val Asn Leu Val
65 70 75 80

His Lys Lys Ile Thr Phe Leu Ile Gly Pro Glu Val Ser Ala His Phe
85 90 95

Phe Lys Ala Ser Glu Ser Asp Leu Ser Gln Gln Glu Val Tyr Gln Phe
100 105 110

Asn Val Pro Thr Phe Gly Pro Gly Val Val Phe Asp Val Asp Tyr Ser
115 120 125

Val Arg Gln Glu Gln Phe Arg Phe Phe Thr Glu Ala Leu Arg Val Asn
130 135 140

Lys Leu Lys Gly Tyr Val Asp Met Met Val Thr Glu Ala Glu Asp Tyr
 145 150 155 160

Phe Ser Lys Trp Gly Glu Ser Gly Glu Val Asp Ile Lys Val Glu Leu
 165 170 175

Glu Arg Leu Ile Ile Leu Thr Ala Ser Arg Cys Leu Leu Gly Arg Glu
 180 185 190

Val Arg Asp Gln Leu Phe Asp Asp Val Ser Ala Leu Phe His Asp Leu
 195 200 205

Asp Asn Gly Met Leu Pro Ile Ser Val Leu Phe Pro Tyr Leu Pro Ile
 210 215 220

Pro Ala His Arg Arg Arg Asp Arg Ala Arg Glu Lys Leu Ser Glu Ile
 225 230 235 240

Phe Ala Lys Ile Ile Gly Ser Arg Lys Arg Ser Gly Lys Thr Glu Asn
 245 250 255

Asp Met Leu Gln Cys Phe Ile Glu Ser Lys Tyr Lys Asp Gly Arg Gln
 260 265 270

Thr Thr Glu Ser Glu Val Thr Gly Leu Leu Ile Ala Ala Leu Phe Ala
 275 280 285

Gly Gln His Thr Ser Ser Ile Thr Ser Thr Trp Thr Gly Ala Tyr Leu
 290 295 300

Met Arg Tyr Lys Glu Tyr Phe Ser Ala Ala Leu Asp Glu Gln Lys Asn
 305 310 315 320

Leu Ile Ala Lys His Gly Asp Lys Ile Asp His Asp Ile Leu Ser Glu
 325 330 335

Met Asp Val Leu Tyr Arg Cys Ile Lys Glu Ala Leu Arg Leu His Pro
 340 345 350

Pro Leu Ile Met Leu Met Arg Ala Ser His Ser Asp Phe Ser Val Thr
 355 360 365

Ala Arg Asp Gly Lys Thr Tyr Asp Ile Pro Lys Gly His Ile Val Ala
 370 375 380

Thr Ser Pro Ala Phe Ala Asn Arg Leu Pro His Ile Phe Lys Asp Pro
 385 390 395 400

Asp Thr Tyr Asp Pro Glu Arg Phe Ser Pro Gly Arg Glu Glu Asp Lys
 405 410 415

Ala Ala Gly Ala Phe Ser Tyr Ile Ala Phe Gly Gly Arg His Gly
 420 425 430

Cys Leu Gly Glu Pro Phe Ala Tyr Leu Gln Ile Lys Ala Ile Trp Ser
 435 440 445

His Leu Leu Arg Asn Phe Glu Leu Glu Leu Val Ser Pro Phe Pro Glu
450 455 460

Ile Asp Trp Asn Ala Met Val Val Gly Val Lys Gly Asn Val Met Val
465 470 475 480

Arg Tyr Lys Arg Arg Gln Leu Ser
485

<210> 18

<211> 1852

<212> DNA

<213> *Arabidopsis thaliana*

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<210> 19
<211> 488
<212> PRT
<213> *Arabidopsis thaliana*

<400> 19

Met Glu Leu Asp Ser Glu Asn Lys Leu Leu Lys Thr Gly Leu Val Ile
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Val Ala Thr Leu Val Ile Ala Lys Leu Ile Phe Ser Phe Phe Thr Ser
20 25 30

Asp Ser Lys Lys Lys Arg Leu Pro Pro Thr Leu Lys Ala Trp Pro Pro
35 40 45

Leu Val Gly Ser Leu Ile Lys Phe Leu Lys Gly Pro Ile Ile Met Leu
50 55 60

Arg Glu Glu Tyr Pro Lys Leu Gly Ser Val Phe Thr Val Asn Leu Val
65 70 75 80

His Lys Lys Ile Thr Phe Leu Ile Gly Pro Glu Val Ser Ala His Phe
85 90 95

Phe Lys Ala Ser Glu Ser Asp Leu Ser Gln Gln Glu Val Tyr Gln Phe
100 105 110

Asn Val Pro Thr Phe Gly Pro Gly Val Val Phe Asp Val Asp Tyr Ser
115 120 125

Val Arg Gln Glu Gln Phe Arg Phe Phe Thr Glu Ala Leu Arg Val Asn
130 135 140

Lys Leu Lys Gly Tyr Val Asp Met Met Val Thr Glu Ala Glu Asp Tyr
145 150 155 160

Phe Ser Lys Trp Gly Glu Ser Gly Glu Val Asp Ile Lys Val Glu Leu
165 170 175

Glu Arg Leu Ile Ile Leu Thr Ala Ser Arg Cys Leu Leu Gly Arg Glu
180 185 190

Val Arg Asp Gln Leu Phe Asp Asp Val Ser Ala Leu Phe His Asp Leu
195 200 205

Asp Asn Gly Met Leu Pro Ile Ser Val Leu Phe Pro Tyr Leu Pro Ile
210 215 220

Pro Ala His Arg Arg Arg Asp Arg Ala Arg Glu Lys Leu Ser Glu Ile
225 230 235 240

Phe Ala Lys Ile Ile Gly Ser Arg Lys Arg Ser Gly Lys Thr Glu Asn
245 250 255

Asp Met Leu Gln Cys Phe Ile Glu Ser Lys Tyr Lys Asp Gly Arg Gln
260 265 270

Thr Thr Glu Ser Glu Val Thr Gly Leu Leu Ile Ala Ala Leu Phe Ala
275 280 285

Gly Gln His Thr Ser Ser Ile Thr Ser Thr Trp Thr Gly Ala Tyr Leu
290 295 300

Met Arg Tyr Lys Glu Tyr Phe Ser Ala Ala Leu Asp Glu Gln Lys Asn
305 310 315 320

Leu Ile Ala Lys His Gly Asp Lys Ile Asp His Asp Ile Leu Ser Glu
325 330 335

Met Asp Val Leu Tyr Arg Cys Ile Lys Glu Ala Leu Arg Leu His Pro
340 345 350

Pro Leu Ile Met Leu Met Arg Ala Ser His Ser Asp Phe Ser Val Thr
355 360 365

Ala Arg Asp Gly Lys Thr Tyr Asp Ile Pro Lys Gly His Ile Val Ala
370 375 380

Thr Ser Pro Ala Phe Ala Asn Arg Leu Pro His Ile Phe Lys Asp Pro
385 390 395 400

Asp Thr Tyr Asp Pro Glu Arg Phe Ser Pro Gly Arg Glu Glu Asp Lys
405 410 415

Ala Ala Gly Ala Phe Ser Tyr Ile Ala Phe Gly Gly Arg His Gly
420 425 430

Cys Leu Gly Glu Pro Phe Ala Tyr Leu Gln Ile Lys Ala Ile Trp Ser
435 440 445

His Leu Leu Arg Asn Phe Glu Leu Glu Leu Val Ser Pro Phe Pro Glu
450 455 460

Ile Asp Trp Asn Ala Met Val Val Gly Val Lys Gly Asn Val Met Val
465 470 475 480

Arg Tyr Lys Arg Arg Gln Leu Ser
485

<210> 20
<211> 1249
<212> DNA
<213> Arabidopsis thaliana

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gccgtcgatc tcatcaaagt gaaaccggga caaaagattc ttgacgctgg ttgcggcgtg 420
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<212> DNA
<213> Nicotiana tabacum

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aaaaa 1444

<211> 1421
<212> DNA
<213> *Arabidopsis thaliana*

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<210> 23
<211> 1175
<212> DNA

<213> *Arabidopsis thaliana*

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gcggcggata atgcttatct gatgcagttt gttgacgaaa cctctttta caaccgaatc 180
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<210> 24
<211> 1431
<212> DNA
<213> *Hevea brasiliensis*

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<211> 476
<212> PRT

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Asn Tyr Leu Ile Asp Glu Asp His Arg Leu Val Thr Cys Pro Pro Ala
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Asn Ile Ser Thr Lys Thr Thr Ile Ile Ala Ala Pro Thr Lys Leu Pro
35 40 45

Thr Ser Glu Pro Leu Ile Ala Pro Leu Val Ser Glu Glu Asp Glu Met
50 55 60

Ile Val Asn Ser Val Val Asp Gly Lys Ile Pro Ser Tyr Ser Leu Glu
65 70 75 80

Ser Lys Leu Gly Asp Cys Lys Arg Ala Ala Ala Ile Arg Arg Glu Ala
85 90 95

Leu Gln Arg Met Thr Arg Arg Ser Leu Glu Gly Leu Pro Val Glu Gly
100 105 110

Phe Asp Tyr Glu Ser Ile Leu Gly Gln Cys Cys Glu Met Pro Val Gly
115 120 125

Tyr Val Gln Ile Pro Val Gly Ile Ala Gly Pro Leu Leu Leu Asn Gly
130 135 140

Arg Glu Tyr Ser Val Pro Met Ala Thr Thr Glu Gly Cys Leu Val Ala
145 150 155 160

Ser Thr Asn Arg Gly Cys Lys Ala Ile Tyr Leu Ser Gly Gly Ala Thr
165 170 175

Ser Val Leu Leu Lys Asp Gly Met Thr Arg Ala Pro Val Val Arg Phe
180 185 190

Ala Ser Ala Thr Arg Ala Ala Glu Leu Lys Phe Phe Leu Glu Asp Pro
195 200 205

Asp Asn Phe Asp Thr Leu Ala Val Val Phe Asn Lys Ser Ser Arg Phe
210 215 220

Ala Arg Leu Gln Gly Ile Lys Cys Ser Ile Ala Gly Lys Asn Leu Tyr
225 230 235 240

Ile Arg Phe Ser Cys Ser Thr Gly Asp Ala Met Gly Met Asn Met Val
245 250 255

Ser Lys Gly Val Gln Asn Val Leu Glu Phe Leu Gln Ser Asp Phe Ser
260 265 270

Asp Met Asp Val Ile Gly Ile Ser Gly Asn Phe Cys Ser Asp Lys Lys
275 280 285

Pro Ala Ala Val Asn Trp Ile Glu Gly Arg Gly Lys Ser Val Val Cys
290 295 300

Glu Ala Ile Ile Lys Glu Glu Val Val Lys Lys Val Leu Lys Thr Asn
305 310 315 320

Val Ala Ser Leu Val Glu Leu Asn Met Leu Lys Asn Leu Ala Gly Ser
325 330 335

Ala Val Ala Gly Ala Leu Gly Gly Phe Asn Ala His Ala Gly Asn Ile
340 345 350

Val Ser Ala Ile Phe Ile Ala Thr Gly Gln Asp Pro Ala Gln Asn Val
355 360 365

Glu Ser Ser His Cys Ile Thr Met Met Glu Ala Val Asn Asp Gly Lys
370 375 380

Asp Leu His Ile Ser Val Thr Met Pro Ser Ile Glu Val Gly Thr Val
385 390 395 400

Gly Gly Gly Thr Gln Leu Ala Ser Gln Ser Ala Cys Leu Asn Leu Leu
405 410 415

Gly Val Lys Gly Ala Asn Lys Glu Ser Pro Gly Ser Asn Ser Arg Leu
420 425 430

Leu Ala Ala Ile Val Ala Gly Ser Val Leu Ala Gly Glu Leu Ser Leu
435 440 445

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<210> 26

<211> 1431

<212> DNA

<213> Hevea brasiliensis

<400> 26

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<210> 27
<211> 476
<212> PRT
<213> Hevea brasiliensis

<400> 27

Met Ala Arg Ala Ser His Asp Val Trp Asp Leu Glu Asp Thr Asp Pro
1 5 10 15

Asn Tyr Leu Ile Asp Glu Asp His Arg Leu Val Thr Cys Pro Pro Ala
20 25 30

Asn Ile Ser Thr Lys Thr Ile Ile Ala Ala Pro Thr Lys Leu Pro
35 40 45

Thr Ser Glu Pro Leu Ile Ala Pro Leu Val Ser Glu Glu Asp Glu Met
50 55 60

Ile Val Asn Ser Val Val Asp Gly Lys Ile Pro Ser Tyr Ser Leu Glu
65 70 75 80

Ser Lys Leu Gly Asp Cys Lys Arg Ala Ala Ala Ile Arg Arg Glu Ala
85 90 95

Leu Gln Arg Met Thr Arg Arg Ser Leu Glu Gly Leu Pro Val Glu Gly
100 105 110

Phe Asp Tyr Glu Ser Ile Leu Gly Gln Cys Cys Glu Met Pro Val Gly
115 120 125

Tyr Val Gln Ile Pro Val Gly Ile Ala Gly Pro Leu Leu Leu Asn Gly
130 135 140

Arg Glu Tyr Ser Val Pro Met Ala Thr Thr Glu Gly Cys Leu Val Ala
 145 150 155 160
 Ser Thr Asn Arg Gly Cys Lys Ala Ile Tyr Leu Ser Gly Gly Ala Thr
 165 170 175
 Ser Val Leu Leu Lys Asp Gly Met Thr Arg Ala Pro Val Val Arg Phe
 180 185 190
 Ala Ser Ala Thr Arg Ala Ala Glu Leu Lys Phe Phe Leu Glu Asp Pro
 195 200 205
 Asp Asn Phe Asp Thr Leu Ala Val Val Phe Asn Lys Ser Ser Arg Phe
 210 215 220
 Ala Arg Leu Gln Gly Ile Lys Cys Ser Ile Ala Gly Lys Asn Leu Tyr
 225 230 235 240
 Ile Arg Phe Ser Cys Ser Thr Gly Asp Ala Met Gly Met Asn Met Val
 245 250 255
 Ser Lys Gly Val Gln Asn Val Leu Glu Phe Leu Gln Ser Asp Phe Ser
 260 265 270
 Asp Met Asp Val Ile Gly Ile Ser Gly Asn Phe Cys Ser Asp Lys Lys
 275 280 285
 Pro Ala Ala Val Asn Trp Ile Glu Gly Arg Gly Lys Ser Val Val Cys
 290 295 300
 Glu Ala Ile Ile Lys Glu Glu Val Val Lys Lys Val Leu Lys Thr Asn
 305 310 315 320
 Val Ala Ser Leu Val Glu Leu Asn Met Leu Lys Asn Leu Ala Gly Ser
 325 330 335
 Ala Val Ala Gly Ala Leu Gly Gly Phe Asn Ala His Ala Gly Asn Ile
 340 345 350
 Val Ser Ala Ile Phe Ile Ala Thr Gly Gln Asp Pro Ala Gln Asn Val
 355 360 365
 Glu Ser Ser His Cys Ile Thr Met Met Glu Ala Val Asn Asp Gly Lys
 370 375 380
 Asp Leu His Ile Ser Val Thr Met Pro Ser Ile Glu Val Gly Thr Val
 385 390 395 400
 Gly Gly Gly Thr Gln Leu Ala Ser Gln Ser Ala Cys Leu Asn Leu Leu
 405 410 415
 Gly Val Lys Gly Ala Asn Lys Glu Ser Pro Gly Ser Asn Ser Arg Leu
 420 425 430
 Leu Ala Ala Ile Val Ala Gly Ser Val Leu Ala Gly Glu Leu Ser Leu
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Met Ser Ala Ile Ala Ala Gly Gln Leu Val Lys Ser His Met Lys Tyr
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Asn Arg Ser Ala Lys Asp Met Ser Lys Ala Ala Ser
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31

<210> 33

<211> 31

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<400> 33

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31